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A.D. 1867, 31st DECEMBER. N° 3720.

Sweeping Machines.

LETTERS PATENT to Alexander Melville Clark, of 53, Chancery Lane, in the County of Middlesex, for the Invention of "IMPROVEMENTS IN ROAD SWEEPING MACHINES."—A communication from abroad by Jean Tailfer, Machinist, and Charles Léon Blot, Engineer, both of 29, Boulevard St. Martin, Paris.

Sealed the 16th June 1868, and dated the 31st December 1867.

PROVISIONAL SPECIFICATION left by the said Alexander Melville Clark at the Office of the Commissioners of Patents, with his Petition, on the 31st December 1867.

I, ALEXANDER MELVILLE CLARK, of 53, Chancery Lane, in the County of 5 Middlesex, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN ROAD SWEEPING MACHINES," to be as follows:—

This Invention relates to improvements in road sweeping machines to be driven by horse or other power.

The chief features of improvement consist, 1st, in a new mode of transmitting motion from the running wheel to the brush, which is effected direct by means of toothed gearing, dispensing with the endless chain usually employed, and simplifying the action.

2ndly. In the application of a universal joint for connecting the driving pinion to the brush axis for imparting motion thereto. In consequence of the 15 inclined position of the brush axis with regard to the axle of the apparatus bevel gearing can only be employed in connection with an intermediate axis, but according to these improvements I use ordinary toothed gearing communicating motion direct by the aid of the universal joint, which, as before mentioned, serves to connect the pinion with the brush.

Clark's Improvements in Road Sweeping Machines.

3rdly. In a new mode of balancing the brush, whereby an elastic pressure is obtained for ensuring its perfect action.

4thly. In a new mode of regulating the sweeping action, which is effected by the aid of small wheels or rollers running on the ground fixed to the oscillating frame carrying the brush, so as to cause it to bear more or less on the ground. 5

I have represented one example of these improvements in road sweeping machines in the accompanying Drawings, Figure 1 of which shows a longitudinal elevation of the apparatus, Figure 2 a plan of same, while Figure 3 shows a separate view of the universal joint for connecting the driving pinion 10 to the brush axis. The same letters of reference apply to the three Figures.

a, frame of the machine mounted on an axle *b* carrying the running wheels *c, d*, which are both mounted loosely thereon, the boss of wheel *d* being prolonged on the inside, where it is provided with a toothed wheel *f* keyed thereon and gearing with a pinion *g*; *h*, oscillating frames mounted on axle *b* 15 carrying the ends of the brush axis; *i*, main suspension lever for regulating the action of the brush roller oscillating on the wheel axle, one end of this lever is connected to a chain *j* attached to the brush and the other end terminates in a nut, whereby the lever may be raised or lowered by means of a screw *k*; *l*, balance and pressure lever fixed at a suitable point of axle *b*, its 20 other end resting on a spiral spring *m* carried on a stem. When the brush is lowered by the suspension lever *i* the latter comes in contact with the balance lever *l*, and by means of frame *h* and spring *m* imparts the elastic pressure desired at that end of the brush roller next the driving gear; *o*, cylindrical brush to the axis *p* of which the pinion *g* is connected by the 25 universal joint *q*; *r*, wheels or rollers mounted on spindles *s*, so as to be readily raised or lowered according to the greater or less contact of the brush roller with the ground desired.

The Invention thus consists in the herein-described improvements in road sweeping machines, the chief features being, first, the direct transmission of 30 motion by means of ordinary toothed gearing.

Secondly. The application of the universal joint in the manner described.

Thirdly. The new mode of balancing the brush roller, so as to obtain an elastic pressure.

Fourthly. The employment of rollers for regulating the sweeping action, as 35 described.

Specification.

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SPECIFICATION is
by the said Ale
the 25th June

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WHEREAS Her
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SPECIFICATION in pursuance of the conditions of the Letters Patent, filed
by the said Alexander Melville Clark in the Great Seal Patent Office on
the 25th June 1868.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALEXANDER
5 MELVILLE CLARK, of 53, Chancery Lane, in the County of Middlesex, send
greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters
Patent, bearing date the Thirty-first day of December, in the year of our
Lord One thousand eight hundred and sixty-seven, in the thirty-first year of
10 Her reign, did, for Herself, Her heirs and successors, give and grant unto
me, the said Alexander Melville Clark, Her special licence that I, the
said Alexander Melville Clark, my executors, administrators, and assigns,
or such others as I, the said Alexander Melville Clark, my executors,
administrators, and assigns, should at any time agree with, and no others,
15 from time to time and at all times thereafter during the term therein
expressed, should and lawfully might make, use, exercise, and vend, within
the United Kingdom of Great Britain and Ireland, the Channel Islands,
and Isle of Man, an Invention for "IMPROVEMENTS IN ROAD SWEEPING
MACHINES," a communication to me from abroad by Jean Tailfer, Machinist,
20 and Charles Léon Blot, Engineer, both of 29, Boulevart St. Martin, Paris,
upon the condition (amongst others) that I, the said Alexander Melville
Clark, my executors or administrators, by an instrument in writing under my,
or their, or one of their hands and seals, should particularly describe and
ascertain the nature of the said Invention, and in what manner the same was
25 to be performed, and cause the same to be filed in the Great Seal Patent
Office within six calendar months next and immediately after the date of
the said Letters Patent.

NOW KNOW YE; that I, the said Alexander Melville Clark, do
hereby declare the nature of the said Invention, and in what manner the
30 same is to be performed, to be particularly described and ascertained in and
by the following statement, reference being had to the Sheet of Drawings
hereunto annexed, and to the letters and figures marked thereon (that is
to say):—

This Invention relates to improvements in road sweeping machines to be
35 driven by horse or other power.

The chief features of improvement consist, 1st, in a new mode of trans-
mitting motion from the running wheel to the brush which is effected in a

Clark's Improvements in Road Sweeping Machines.

direct manner by means of spur gearing, so dispensing with the endless chain usually employed and simplifying the action.

2ndly. In the application of a universal joint connecting the driving pinion to the brush axis for imparting motion thereto. In consequence of the inclined position of the brush axis with regard to the axle of the machine 5 bevel gearing can only be employed in connection with an intermediate axis, but according to these improvements I use ordinary spur gearing communicating motion direct by the aid of the universal joint which as before mentioned serves to connect the pinion with the brush.

3rdly. In a new mode of balancing the brush, whereby an elastic pressure 10 is obtained for ensuring its perfect action.

4thly. In a new mode of regulating the sweeping action, which is effected by the aid of small wheels or rollers mounted on the oscillating frame carrying the brush, their position being regulated so as to make it bear more or less on the ground.

5thly. In the employment of an additional brush having a to-and-fro motion (or it may be a circular brush made to rotate) placed at the forward end of the large circular brush, serving principally when sweeping liquid mud to prevent any accumulation of mud caused by the oblique position of the large brush.

6thly. When the large brush is raised and out of action it assumes an inclined position in consequence of its being heavier at one end than the other, and to obviate this I provide a spring to keep the brush in a horizontal position.

I have represented one example of these improvements in road sweeping 25 machines in the accompanying Drawings. Figure 1 of which shows a longitudinal elevation of the apparatus, and Figure 2 a plan of same, while Figure 3 shows a separate view of the universal joint for connecting the driving pinion to the brush axis. The same letters of reference apply to the three Figures.

a, frame of the machine mounted on an axle *b* carrying the running wheels *c, d*, which are both mounted loosely thereon, the boss of wheel *d* being prolonged on the inside, where it is provided with a toothed wheel *f* keyed theron and gearing with a pinion *g*; *h*, oscillating frames mounted on axle *b* and carrying the ends of the brush axis; *i*, main suspension lever for regulating the action of the brush oscillating on the wheel axle, one end of this lever is connected to a chain *j* attached to the brush the other end terminating in a nut, whereby the lever may be raised or lowered by means of a screw *k*; *l*, balance and pressing lever fixed at a suitable point of axle *b*, its other end

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Clark's Improvements in Road Sweeping Machines.

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resting on a spiral spring *m* carried on a stem. When the brush is lowered by the suspension lever *i* the latter comes in contact with the balance lever *l*, and by means of frame *h* and spring *m* imparts the elastic pressure desired at that end of the brush next the driving gear; *o*, cylindrical brush to the axis *p* of which the pinion *g* is connected by the universal joint *q*; *r*, wheels or rollers mounted on a stem *s* so as to be readily raised or lowered according to the greater or less contact desired of the brush with the ground; *t*, additional brush for preventing the accumulation of mud produced by the oblique position of the brush; *u* spring for keeping the brush in a horizontal position 10 when raised.

Having described the nature of this Invention, and the manner of performing the same, I declare that what I claim as the Invention to be protected by the herein-before in part recited Letters Patent as improvements in road sweeping machines is,—

15 1st. Transmitting motion to the brush direct by means of spur gearing, as herein-before described.

2ndly. I claim the application of the universal joint in the manner and for the purpose described.

3rdly. I claim the mode of balancing the brush so as to obtain an elastic 20 pressure, as before described.

4thly. I claim the use of rollers for regulating the sweeping, as herein-before described.

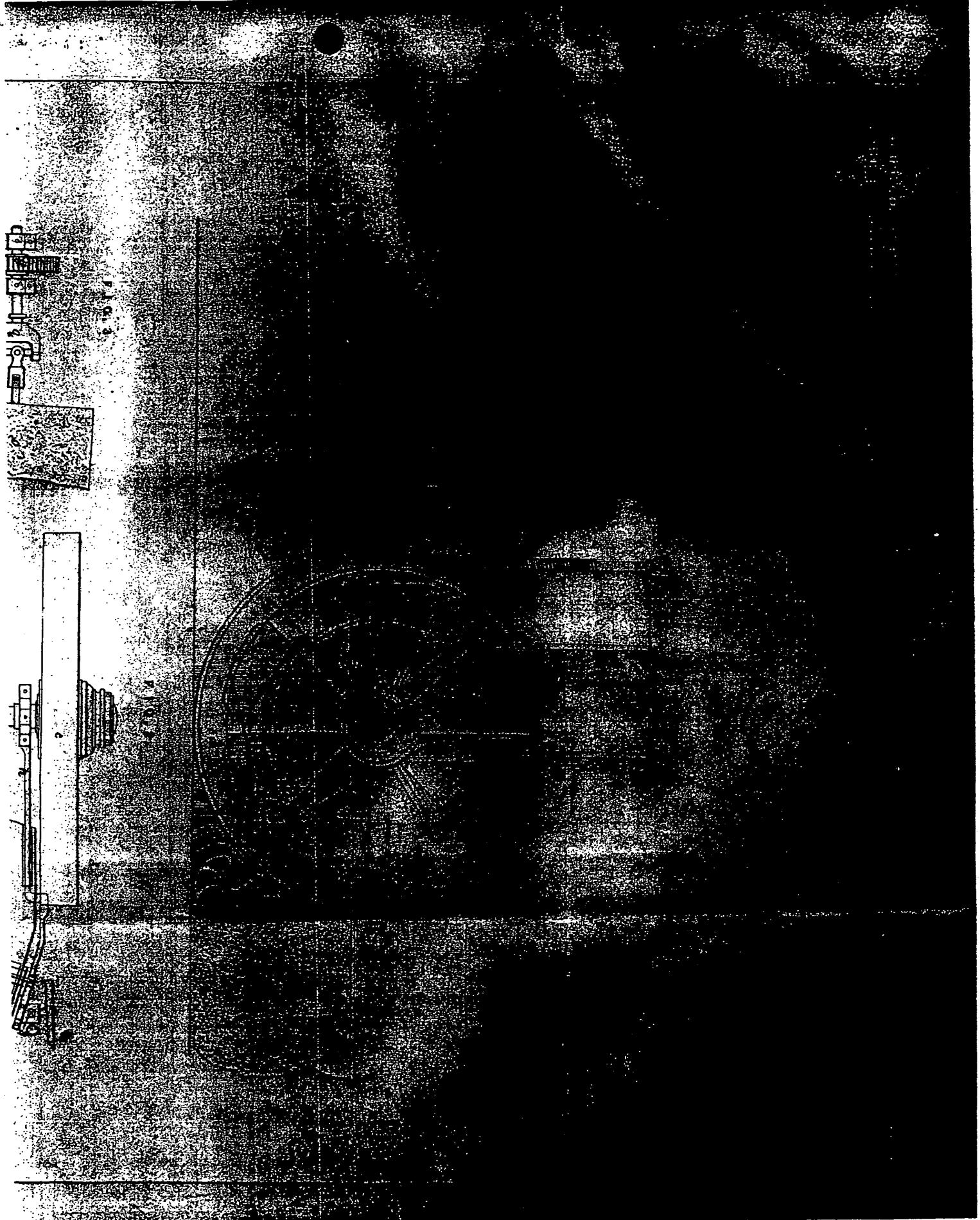
I also reserve the right of working the apparatus by any suitable power:

In witness whereof, I, the said Alexander Melville Clark, have hereunto 25 set my hand and seal, this Twenty-fifth day of June, in the year of our Lord One thousand eight hundred and sixty-eight.

A. M. CLARK. (L.S.)

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1868.



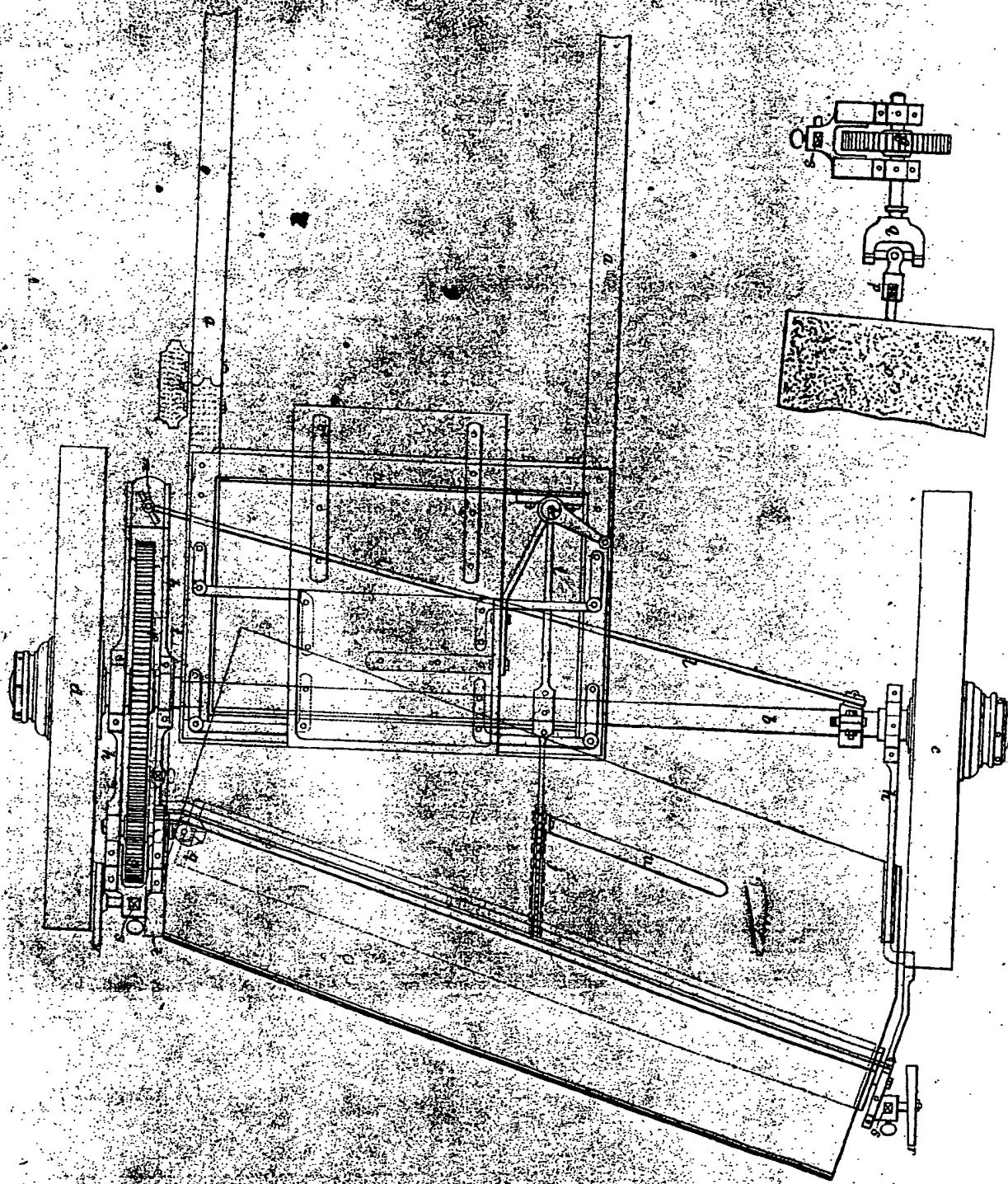


FIG. 3.

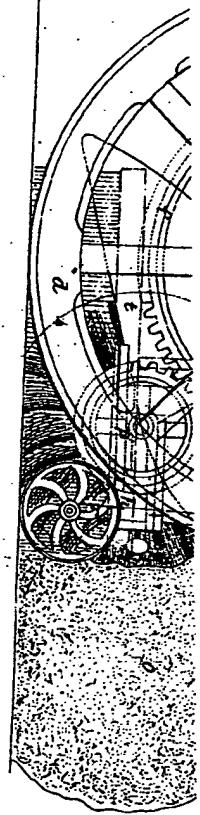


FIG. 2.